University of Osijek Faculty of Food Technology Osijek / Sveučilište u Osijeku Prehrambeno-tehnološki fakultet Osijek
Faculty of Pharmacy Tuzla / Farmaceutski fakultet Tuzla
University of Trondheim / Sveučilište u Trondheimu
Faculty of Agriculture in Osijek / Poljoprivredni fakultet u Osijeku
Faculty of Medicine Osijek / Medicinski fakultet Osijek
Faculty of Chemistry and Technology Split / Kemijsko-tehnološki fakultet Split
Faculty of Technology Tuzla / Tehnološki fakultet Tuzla
Polytechnic in Požega / Veleučilište u Požegi
Society for Nutrition and Dietetics of B&H / Udruženje za nutricionizam i dijetetiku BiH
Veterinary Institute Vinkovci / Veterinarski institut Vinkovci
Chamber of Pharmacists TK / Farmaceutska komora TK
Andrija Štampar – Association of People's Health / Udruga narodnog zdravlja Andrija Štampar
Croatian Food Agency / Hrvatska agencija za hranu
Society of Chemical Engineers and Technologists Osijek / Društvo kemičara i tehnologa Osijek
European Hygienic Engineering & Design Group (EHEDG) / Europska udruga za higijensko inženjerstvo i dizajn
The International Union of Food Science and Technology (IUFoST)
Croatian Association of Hospital Doctors / Hrvatska udruga bolničkih liječnika

BOOK OF ABSTRACTS / KNJIGA SAŽETAKA

10th International Scientific and Professional Conference
WITH FOOD TO HEALTH
Osijek, Croatia, October 12th - 13th 2017

The Conference will be credited according to the ordinance of Croatian medical chamber

10. međunarodni znanstveno-stručni skup
HRANOM DO ZDRAVLJA
Osijek, Hrvatska, 12. – 13. listopada 2017.

Skup će biti bodovan sukladno pravilnicima Hrvatske liječničke komore

10 with food to health

Osijek and / i Tuzla, 2017.

BOOK OF ABSTRACTS

KNJIGA SAŽETAKA

10th International Scientific and Professional Conference WITH FOOD TO HEALTH
10. međunarodni znanstveno-stručni skup
HRANOM DO ZDRAVLJA

***Published by* / Izdavači**

Josip Juraj Strossmayer University of Osijek
Faculty of Food Technology Osijek and
Faculty of Pharmacy, University of Tuzla
Sveučilište Josipa Jurja Strossmayera u Osijeku
Prehrambeno-tehnološki fakultet Osijek i
Farmaceutski fakultet Univerziteta u Tuzli

***Editors* / Urednici** Drago Šubarić, Midhat Jašić

***Executive Editor* / Izvršna urednica** Daniela Čačić Kenjerić

***Technical Editors* / Tehnički urednici** Đurđica Ačkar, Ante Lončarić

***Proofreaders* / Lektori** Antonija Šarić (eng.), Jure Ačkar (hrv.)

***Cover page design* / Dizajn naslovnice**
***Printing and Binding* / Tisak i uvez** Studio HS internet d.o.o., Osijek, Hrvatska

***Number of Copies* / Naklada** 250

Osijek and / i Tuzla, 2017.
ISBN (Osijek): 978-953-7005-49-8
ISSN (Tuzla): 2232-9536
EAN 9789537005498

SELECTION OF NS RAPESEED GENOTYPES ACCORDING TO THE USEFUL VALUE OF OIL

Ana Marjanović Jeromela*, Nada Grahovac, Zvonimir Sakač, Nada Lečić, Petar Mitrović, Željko Milovac, Vladimir Miklič

Institute of Field and Vegetables Crops, 21 000 Novi Sad, Serbia
**ana.jeromela@ifvcns.ns.ac.rs*

poster

Rapeseed (*Brassia napus L.*) is the most common source of vegetable oils in Europe. Global production of *Brassica* oilseeds has increased faster over the past two decades than that of any other oilseed. Therefore, one of the main breeding objective is to create rapeseed genotypes with highly appreciated nutritional characteristics. The crude rapeseed oil is rich source of omega-3 fatty acids, antioxidants and other phytonutrients essential for good human health.

The aim of this study was to investigate fatty acid and tocopherol constituents (α-, β-, γ- tocopherols) in a collection of 37 NS rapeseed genotypes. This collection is used in the breeding program in order to improve the quality of the oil. The fatty acid profiles are obtained using the gas chromatography–flame ionisation detection which is sensitive method for determining the fatty acid compositions. Tocopherols were determined in rapeseed oil samples by using the normal-phase high-performance liquid chromatography with fluorescence detection.

Results revealed that major identified fatty acids oleic (57.80–69.20 %), linoleic (15.30–56.50 %), and linolenic acid (7.90–26.60 %). In rapeseed oil samples were quantified three tocopherols with prevailing α-tocopherol (40.65–523.91 mg/kg) and γ-tocopherol (167.75–353.54 mg/kg) and lesser levels of β-tocopherol (0.04–19.04 mg/kg). Obtained results showed that the investigated NS rapeseed genotypes are rich source of essential fatty acids as well as water-soluble vitamins (α- and γ-tocopherols). The predominant essential fatty acids were found to be (ω-6) linoleic acid followed by (ω-3) linolenic acid at ω-6 to ω-3 ratio of 2.2:1 for three investigated rapeseed genotypes which makes them nutritionally valuable. An ω-6/ω-3 fatty acid ratio of 5:1 or less is desired for maintaining good health as suggested by nutrition experts. Due to these chemical properties some of investigated rapeseed genotypes (less than 2 % erucic acid in the oil and less than 30 μmol/g glucosinolates) can be used as salad or salad dressing oils.

Keywords: rapeseed oil, fatty acids, tocopherols